Decreasing Alarm Fatigue and Increasing Patient Safety in the Setting of a Cardiac Telemetry Unit

Meridith Blessard BSN, RN; Jenna Lakeman BSN, RN; Emily Randall BSN, RN; Kristen Vafiades BSN, RN

Background

- Alarm fatigue is a prevalent aspect of healthcare due to the increased reliability of technology in the field.
- Alarm fatigue occurs not only from accurate alarms, but also from alarms that are inaccurate. The increase in “false alarms” can lead to disarming monitors which could pose a threat to patient safety.
- Excessive use of telemetry monitors does not increase detection of significant cardiac rhythm events but does increase alarm fatigue in healthcare providers and healthcare costs to patients.

Methods

- 1. Obtain pre-implementation cardiac alarm data
- 2. Provide education to staff along with cardiac alarm control checklists
- 3. Obtain post-implementation cardiac alarm data

Measures and Results

Average Number of Telemetry Alarms within 24-hour period (n=32)

<table>
<thead>
<tr>
<th></th>
<th>Pre-Implementation Data</th>
<th>Post-Implementation Data</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Average Number of Alarms in 24-hour period</td>
<td>2260</td>
<td>1690</td>
</tr>
<tr>
<td>Total Average Number of Critical Alarms in 24-hour period</td>
<td>6</td>
<td>38</td>
</tr>
</tbody>
</table>

** Data collected over 6 days pre-implementation and 3 days post-implementation from P6 Cardiac Telemetry

Summary/Discussion

- Next Steps:
  - Post handout/guidelines for accurate cardiac monitoring in common areas for future reference
  - Continue to provide education to RNs and monitor techs working in the clinical setting
- Barriers of this Study:
  - Limited access to alarm data
  - Limited amount of time for data collection
  - Variation of alarm adjusting from monitor technicians and nurses.

Conclusion

- Further education on alarm regulation is needed
- Education provided to nurses on P6 cardiac telemetry helped to reduce the total number of alarms
- The number of critical alarms within a 24-hour period was higher after education: Possibly due to:
  - more accurate alarm control
  - the acuity of the patients on the floor when these data were collected—meaning sicker patients with more critical telemetry results
  - the critical alarms were still being based on artifact instead of true critical results
- Best practices should include checking in with monitor techs at the start of the shift to adjust alarm parameters appropriately based on patient specific needs, ensuring electrodes are placed correctly on the patient, and ensuring the electrodes are changed daily and reapplied to clean, skin free of excessive hair.

References


Educational Flyer

Effectively Managing Cardiac Telemetry Alarms to Reduce Alarm Fatigue

- Check with medical order to ensure it is not a false alarm and briefly update on the following:
  - Any increased heart rate, blood pressure, respiratory or diaphoresis (history of mitral valve regurgitation, etc.)
  - This period’s typical HR/RR/bp (check with nurse and make sure it is acceptable level)
  - Adjust alarm settings appropriately
- Is the patient showing frequent ventricular premature complexes (VPCs)?
  - Is this in an acceptable HR/RR? (Check with nurse and make sure it is acceptable level)
  - Are the alarms still set to the appropriate level for the patient’s condition?
- Is the patient on any drugs (i.e. sedatives, diuretics, etc.)?
  - Adjust parameters for monitoring and do alarms reflect the level of invasiveness
- Is the patient supposed to be on continuous pulse oximetry?
  - What levels are acceptable?

**Data collected over 6 days pre-implementation and 3 days post-implementation from P6 Cardiac Telemetry

Educational Flyer

Atelemy Monitoring (Telemetry): The Science Behind It